

In the Claims:

Please cancel claims 1-37 without prejudice.

Claim Listing

Claims 1-37 (canceled)

38. (Original) A phosphorescent coating system comprising:

a substrate;

a color-providing film layer formed from a color-providing composition applied to said substrate; and

an at least partially-transparent clearcoat film layer formed from an at least partially-transparent clearcoat composition applied wet-on-wet to said color-providing composition as said color-providing composition is uncured;

wherein at least one of said color-providing composition and said clearcoat composition is cross-linkable, and at least one of said color-providing composition and said clearcoat composition comprises phosphorescent pigment.

39. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing film layer is further defined as a pigmented basecoat film layer formed from a pigmented basecoat composition applied to said substrate.

40. (Original) A phosphorescent coating system as set forth in claim 39 wherein said pigmented basecoat composition comprises from 5 to 40 parts by weight of pigment based on 100 parts by weight of said pigmented basecoat composition.

41. (Original) A phosphorescent coating system as set forth in claim 39 wherein said pigmented basecoat composition comprises at least one pigment selected from the group consisting of organic pigments, inorganic pigments, and combinations thereof.

42. (Original) A phosphorescent coating system as set forth in claim 39 wherein said clearcoat composition is applied wet-on-wet to said pigmented basecoat composition as said pigmented basecoat composition is uncured and said clearcoat composition comprises said phosphorescent pigment such that exposure of said phosphorescent pigment to an external incident energy source is maximized.

43. (Original) A phosphorescent coating system as set forth in claim 42 wherein said clearcoat composition comprises from 5 to 30 parts by weight of said phosphorescent pigment based on 100 parts by weight of said clearcoat composition.

44. (Original) A phosphorescent coating system as set forth in claim 42 wherein said pigmented basecoat composition and said clearcoat composition are simultaneously cured to form said pigmented basecoat film layer and said clearcoat film layer, respectively.

45. (Original) A phosphorescent coating system as set forth in claim 44 having a DOI of at least 5.5, as defined by ASTM E430-97.

46. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing film layer is further defined as a pigmented basecoat film layer formed from a pigmented basecoat composition comprising said phosphorescent pigment and being applied to said substrate.

47. (Original) A phosphorescent coating system as set forth in claim 46 wherein said pigmented basecoat composition comprises from 5 to 40 parts by weight of pigment based on 100 parts by weight of said pigmented basecoat composition.

48. (Original) A phosphorescent coating system as set forth in claim 46 wherein said pigmented basecoat composition comprises from 5 to 30 parts by weight of said phosphorescent pigment based on 100 parts by weight of said pigmented basecoat composition.

49. (Original) A phosphorescent coating system as set forth in claim 46 wherein said clearcoat composition is applied wet-on-wet to said pigmented basecoat composition to at least partially cover said phosphorescent pigment in said pigmented basecoat composition.

50. (Original) A phosphorescent coating system as set forth in claim 49 wherein said pigmented basecoat composition and said clearcoat composition are simultaneously cured to form said pigmented basecoat film layer and said clearcoat film layer, respectively.

51. (Original) A phosphorescent coating system as set forth in claim 50 having a DOI of at least 5.5, as defined by ASTM E430-97.

52. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment has an average particle size of from 1 to 50 microns.

53. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment has peak excitation level of from 150 to 500 nanometers.

54. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment has a peak emission level of from 400 to 700 nanometers.

55. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment has an afterglow brightness of at least 100 mCd/m².

56. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment is a long persistent phosphorescent pigment having an afterglow extinction time of at least 1000 minutes.

57. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment comprises a phosphorescent phosphor matrix of the general formula $MA_2O_4:X$ wherein M is selected from the group consisting of calcium, strontium, barium, and combinations thereof, and X is at least one activation element suitable for activating MA_2O_4 .

58. (Original) A phosphorescent coating system as set forth in claim 57 wherein said at least one activation element X suitable for activating MA_2O_4 is europium.

59. (Original) A phosphorescent coating system as set forth in claim 57 wherein said at least one activation element X suitable for activating MA_2O_4 is selected from the group consisting of europium, lanthanum, cerium, praseodymium, neodymium, samarium, gadolinium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, tin, bismuth, and combinations thereof.

60. (Original) A phosphorescent coating system as set forth in claim 38 wherein said phosphorescent pigment is $SrAl_2O_4:Eu$.

61. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing composition comprises from 5 to 30 parts by weight of said phosphorescent pigment based on 100 parts by weight of said color-providing composition.

62. (Original) A phosphorescent coating system as set forth in claim 38 wherein said clearcoat composition comprises from 5 to 30 parts by weight of said phosphorescent pigment based on 100 parts by weight of said clearcoat composition.

63. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing composition comprises from 5 to 40 parts by weight of pigment based on 100 parts by weight of said color-providing composition.

64. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing composition is spray applied to said substrate, and said clearcoat composition is spray applied wet-on-wet to said color-providing composition.

65. (Original) A phosphorescent coating system as set forth in claim 38 wherein said substrate is an automotive body panel.
66. (Original) A phosphorescent coating system as set forth in claim 38 wherein said color-providing composition and said clearcoat composition are simultaneously cured to form said color-providing film layer and said clearcoat film layer, respectively, wherein at least one of said color-providing composition and said clearcoat composition cross-links as a result of the cure.
67. (Original) A phosphorescent coating system as set forth in claim 66 having a DOI of at least 5.5, as defined by ASTM E430-97.
68. (Original) A phosphorescent coating system as set forth in claim 66 wherein said phosphorescent pigment has an average particle size of from 1 to 10 microns.
69. (Original) A phosphorescent coating system as set forth in claim 68 having a DOI of at least 5.5, as defined by ASTM E430-97.
70. (Original) A phosphorescent coating system as set forth in claim 38 wherein at least one of said color-providing composition and said clearcoat composition comprises retroreflective microspheres.